



the **MASTER**  **BUILDERS** *La*

CLEVELAND 3, OHIO

TORONTO, ONTARIO



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| MORTAR ADMIXTURES | *"O.M."—OMICRON MORTARPROOFING | Cement dispersing agent, with stearate, reduces water-cement ratio, cuts mortar shrinkage—the principal cause of leaky brickwork — increases bond strength, improves workability, reduces absorption. | 6-7 |
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| CONCRETE FLOOR HARDENERS | *MASTERPLATE | Metallic hardener for heavy duty, sparkproof concrete floors—used up to 120 lbs. per 100 sq. ft. | 8-9 |
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| MEMBRANE CURING COMPOUND | MASTERKURE | Synthetic resin solution for effective and economical curing of concrete. Spray or brush. | 12-13 |
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| GROUTING, REPAIRS AND SURFACE "WATER-PROOFINGS" | *EMBECO | Non-shrink metallic aggregate for: grouting heavy equipment, concrete repair, bonding concrete and mortar, and surface waterproofing. | 14 |
| | METALLIC WATERPROOFING | Brush coat, metallic type for foundations and concrete and masonry surfaces to prevent leakage. | 15 |
| | *MASTERTEX | Cement base paint for decorating and protecting concrete and masonry surfaces, whether wet or dry. | 12 |
| | MASTERSEAL | Colorless surface pore and crack-filling penetrant for brick, tile, stucco and concrete; checks absorption, retards disintegration, resists corrosion. | 13 |

*Products employing Cement Dispersion, which reduces water-cement ratio 15% and increases efficiency of cement.

Research in the Laboratory

FOR 30 years Master Builders have been working continuously to improve concrete and mortar. In field studies and laboratory investigations they have made valuable discoveries in and contributions to concrete workability, strength, watertightness, durability and economy.

This research has produced Cement Dispersion, which improves all concrete and mortar properties, Masterplate, which makes long-life, conductive, spark-resisting floors, and Embeco, which provides non-shrink concrete for grouting and reintegration.

Another important laboratory function is accurate control of manufacturing. This control insures uniform job results with Master Builders' products.

FIELD SERVICE

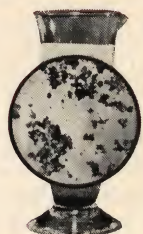
Job problems submitted to Master Builders' field engineers, who are located in all principal cities,

constitute an important phase of the laboratory's continuing program of field service and research.

Much of the data resulting from this research work has been published in the following research papers. Copies of these papers, listed below, are available without cost on request.

RESEARCH PAPERS

- No. 35—"Application of the Principle of Dispersion to Portland Cement."
- No. 36—"Economics of Cement Dispersion."
- No. 37—"Relation of Dispersion to Special Cements."
- No. 38—"Cement Dispersion and Admixtures."
- No. 39—"Cement Dispersion and Air Entrainment."
- No. 40—"Cement Dispersion and Concrete Floors."
- No. E-2—"The Action of Embeco in Concrete and Mortars."



FLOCCULATED

*Photomicrographs
of
Cement Suspensions*



DISPERSED

CEMENT DISPERSION

(Left)—Showing how cement particles clump together or flocculate when placed in water.

(Right)—The cement dispersing agent calcium lignosulfonate causes the particles to separate by imparting to them like electrostatic charges. Dispersion of the cement particles produces these important effects: the water which had been trapped within the particle clumps is released to become a part of the mixing or placing water; the surface area in contact with the water is greatly increased since the particles are no longer in contact with each other. A certain amount of additional air is entrained. By these means the cement is more effectively used to produce concrete and mortar of improved properties.

CEMENT DISPERSION

Produces these Fundamental Improvements

- 1 Great Durability**—Increased watertightness and higher strength cement paste, resulting from cement dispersion, minimize the effects of freezing and thawing. Reduced permeability lessens the effects of corrosive solutions.
- 2 Higher Strength**—Through reduction of the water-cement ratio, and more rapid hydration, cement dispersion produces higher early and ultimate strength.
- 3 Water-tightness**—Greatly improved through reduction in permeability and freedom from cracks and gross defects.
- 4 Volume Change**—Reduction in volume of water required with a dispersing agent lessens volume of the cement paste, reducing volume change or shrinkage.
- 5 Uniformity**—Improved texture and freedom from gross defects results in greater uniformity and improved appearance.

ECONOMIC SIGNIFICANCE

Cement Dispersion by permitting reduction of the water-cement ratio and exposing the full surface area of cement particles, increases compressive strength 25% or more.

Inasmuch as the requirements of design and of specifications are based on strength, concrete and mortar mixes employing cement dispersion take full practical advantage of the potential value of cement and hence are far more economical in initial and long-term cost.



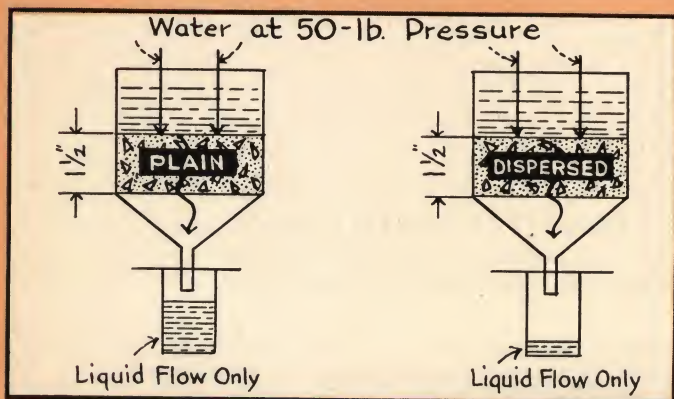
WORKABILITY



Pozzolith Produces Greater Workability With Less Water

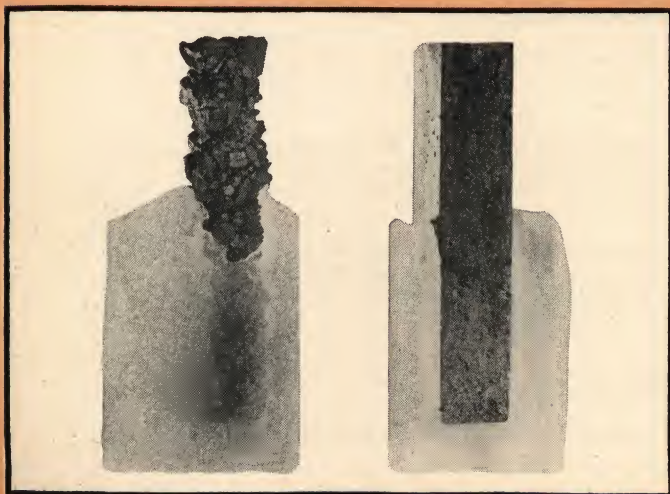
| Plain Mix | | Pozzolith Mix |
|--------------------|------------|---------------|
| 6 3/4 gallons..... | W/C..... | 5 5/8 gallons |
| 1 3/4 inches..... | SLUMP..... | 2 1/2 inches |

WATERTIGHTNESS



In tests by Prof. W. M. Dunagan, Iowa State College, Pozzolith produced 45% greater watertightness. (Proc. ASTM Vol. 39, 1939, pages 866-880.)

DURABILITY



Plain Mix

Pozzolith Mix

In other freezing and thawing tests by National Bureau of Standards, Pozzolith increased durability over 400%.

POZZOLITH FOR BETTER

Pozzolith improves the four essential qualities of concrete. It is the only concrete treatment that produces the important combination of: Increased Durability, Minimum Shrinkage, Maximum Strength and Maximum Economy because only Pozzolith's cement dispersion—

"puts all of the cement to work,"
gives optimum air content,
cuts water-cement ratio 15% and
complies with the water-cement ratio law.

Advantages of Pozzolith

FIRST, POZZOLITH PRODUCES BETTER, MORE DURABLE CONCRETE because it—

1. Reduces water-cement ratio up to 15%*.
2. Increases strength up to 25%*.
3. Reduces segregation; reduces bleeding up to 60%*.
4. Increases watertightness 20% or more.†
5. Increases resistance to freezing and thawing up to 500%*, with higher corrosion resistance.
6. Avoids excess cement content and excess heat and reduces shrinkage and cracks to minimum.

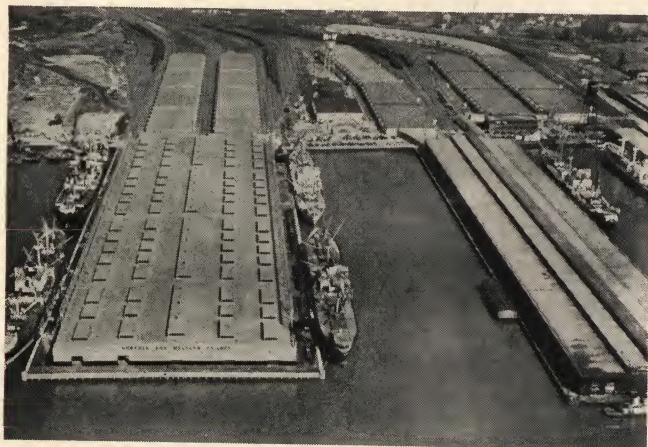
SECOND,

Normal concrete of *any given quality* is produced at lower cost with Pozzolith than by any other means, such as the addition of extra cement or of any other admixture either added at the mixer or inter-ground. Pozzolith reduces costs through—

1. Lower materials-cost, because dispersed cement produces substantially higher strengths.
2. Lower labor costs, because of increased workability, easier placeability and less finishing time.
3. Lower maintenance costs, because of increased resistance to freezing and thawing and corrosion.

*War Department Report from the National Bureau of Standards.

†Tests by Prof. W. M. Dunagan, Iowa State College. (Proc. ASTM Vol. 39, 1939, pages 866-880.)



70,000 cu. yds. of Pozzolith Concrete used in construction of piles, piers and abutments of new Norfolk and Western Ry. Pier N (left). Largest single deck pier on Atlantic Seaboard. Contr.—McLean Contracting Co., Baltimore, Maryland.

MORE ECONOMICAL CONCRETE

High Early Pozzolith provides all the advantages of Standard Pozzolith, plus high early strengths; i.e., normal 3 day strength in 1 day, normal 7 day strength in 3 days, normal 28 day strength in 7 days.

When used for winter construction, High Early Pozzolith used with regular portland cement, reduces the period of heat protection 50% or more.

Conforms with ACI and ASTM Procedures

Authoritative methods for concrete design, specification and production are ACI (613-44) and ASTM (C94-47T)—both based on the water-cement ratio law. Pozzolith also conforms with the water-cement ratio law and when used with these methods produces the best, most economical results.

SPECIFICATIONS

1

Concrete shall be designed in accordance with the ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI-613-44), with normal portland cement and an approved cement dispersing agent which reduces the water required for a given consistency and complies fully with the water-cement ratio law. The strengths, slumps, water-cement ratio, and top size aggregate of the different classes of concrete shall be (insert here, or) as called for on plans or elsewhere in the specifications. The concrete shall be so designed that the materials will not segregate and excessive bleeding will not occur.

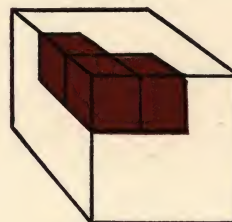
2

To Provide Optimum Air Content in Concrete Subject to Freezing and Thawing:

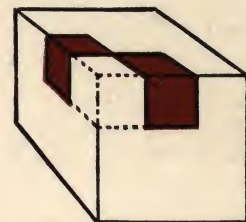
Concrete shall be designed in accordance with the ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI-613-44), with normal portland cement and an approved cement dispersing agent which reduces the water required for a given consistency and complies fully with the water-cement ratio law. The strengths, slumps, water-cement ratio, and top size aggregate of the different classes of concrete shall be as called for on plans or elsewhere in the specifications. All exposed concrete shall contain not less than 3% nor more than 5% total air, by volume, as determined by direct measurement or in accordance with ASTM Method C-138-44. The increased air content shall be obtained by adding at the mixer an air entraining agent which complies with the water-cement ratio law.

Here's Why POZZOLITH

Produces Greater Workability, Watertightness, Durability and Economy



PLAIN CONCRETE



POZZOLITH CONCRETE

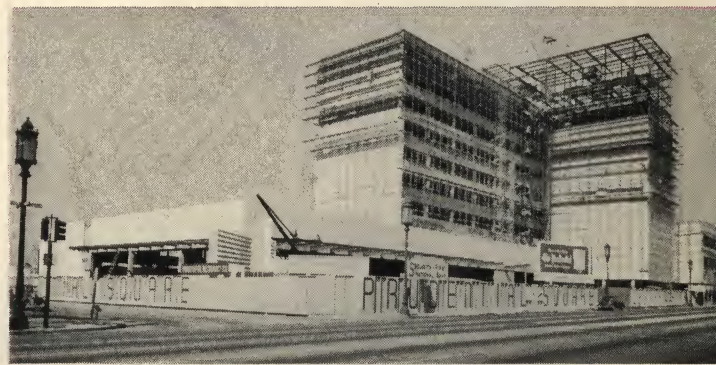
Only about two gallons of water are required to hydrate each sack of cement in a concrete mix.

Balance of water is used to make mix easy to work and place. In plain concrete of average design this mixing and placing water occupies about 10% of the entire mass.

Above left illustration shows the space represented by this water concentrated in one area, instead of being distributed throughout the mass in the form of voids, pores and shrinkage cracks.

Above right illustration shows the amount of this water in Pozzolith Concrete—one-third less than in plain concrete.

RESULTS — equal or greater workability, greater watertightness, durability, economy . . . because Pozzolith, Cement Dispersion, assures control of water in a concrete mix and complies with water-cement ratio law.



Prudential Insurance Co., Los Angeles, Calif. One of several outstanding structures built with lightweight aggregate Pozzolith concrete. Archts.—Walter Wurdeman and Welton Becket; Engrs.—Murray Erick Associates; Gen. Contr.—William Simpson Co., all of Los Angeles, Calif.



Cement Dispersing Agent for Masonry Mortars

"O.M."—Less Shrinkage, More Durability and Economy

One of the most valuable applications of Cement Dispersion is its use in Masonry Mortars, where it not only attacks the principal causes of leakage, but where it effects immediate savings in initial costs.

As formulated for mortar, it is named Omicron Mortarproofing or "O.M." In standard Master Builders' "O.M.", the dispersing agent is combined with a pozzuolanic plasticizer, and water repellent stearate, which results in minimum absorption. "O.M." is a light grey powder, which is added at the mortar box or mixer.

In addition to its neutral shade, "O.M." is made in six non-fading colors for mortars and stucco.

BRIKRON

BRIKRON differs from "O.M." in that it includes no stearate. Like "O.M.", it checks shrinkage cracks, increases bond strength, improves workability and increases durability.

"O.M." CUTS WATER REQUIRED FOR IDEAL WORKABILITY; REDUCED WATER CUTS SHRINKAGE



Shows Equal Workability with "O.M."
Using 15% Less Water

Both Mixes—1 Cement: 1 Lime Putty: 3 Sand

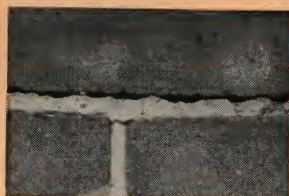
Plain Mix

6.0 gal. w/c 5.1 gal.
2" slump 2"

"O.M." Mix

"O.M." THUS REDUCES BY 30-50% INITIAL SHRINKAGE

which Breaks
Bond At
This Point →
And Is The
Major Cause
of Leaks



"O.M."—FOR WATER MASONRY

OMICRON MORTARPROOFING

"O.M." Controls Mortar Shrinkage—

Shrinkage—the major cause of leaky brickwork—occurs in all mortars during the first forty-eight hours. With prepared masonry mortars and conventional cement and lime mixes, high initial shrinkage is inevitable, because more than twice as much water is required to produce workability as is needed to hydrate the cement.

The shrinkage caused by loss of excess water during the first 48 hours—while the bond between brick and mortar is still weak—frequently results in cracks and leaky brickwork.

Omicron Mortarproofing directly attacks this problem by producing ideal workability with 15-20% less water. Initial shrinkage is thereby reduced 30-50%, or generally below the critical point at which the bond is broken. "O.M." also overcomes the problem of leaky brickwork by (1) on the average increasing bond strength 25% and compressive strength 10% (2) lowering mortar porosity and reducing absorption 30% or more (3) reducing shrinkage by increasing water retentivity and minimizing need for re-tempering.

"O.M." Cuts Costs, Improves Quality—

Builders report that "O.M." cuts material costs by increasing mortar yield. Quantity and quality of work are improved because mortar is more workable, retains plasticity longer, spreads easier and farther and clings and slushes better.

"O.M." Cuts Maintenance Costs—

Entrance of water through shrinkage cracks damages the building itself and often the interior. Shrinkage control with "O.M." saves untimely and costly repairs. "O.M." also reduces maintenance costs by increasing durability.



Schuster's Stores Warehouse, Milwaukee, Wis. Archt.—Brust and Brust, Milwaukee; Gen. Contr.—Selzer-Ornst Co., Milwaukee.

IGHT, DURABLE MORTAR

9a
13

"O.M." For Glass Block—To meet the requirements of glass block construction a mortar should *first*, bond well to the blocks, *second*, hold blocks in place and prevent them from sliding. Because of its exceptional plasticity and cohesiveness, "O.M." meets these qualifications. In addition, "O.M." helps prevent leaky glass walls by developing strength rapidly, which, with greatly reduced shrinkage, preserves the mortar bond.

It is highly important that the bond be preserved in glass block construction because there is no "back up" to prevent water seeping through the wall to the interior of the building.

For Stucco—"O.M." is widely used in stucco to control shrinkage and cracking, to produce better workability and watertightness. (Pictorial directions for use on request.)

SPECIFICATIONS

Mortar for all Masonry or Plaster shall be composed of (designate mix) to which shall be added MASTER BUILDERS CO. "O.M." in the proportions of 1 lb. per each sack of portland or masonry cement and 1 lb. for each cubic foot of lime (hydrated or lime putty) in mix in exact accordance with the directions of the manufacturer.

Mortar for Glass Block—shall consist of 1 part portland cement; $\frac{1}{2}$ part hydrated lime or lime putty; $4\frac{1}{2}$ parts of well graded sand and 1 lb. of "O.M." for each cubic foot of cement and lime in the batch.

Master Builders BRIKRON—shall be added to mortar for all masonry in the proportion of $\frac{1}{2}$ lb. to each sack (cu. ft.) of cement and $\frac{1}{2}$ lb. to each cubic foot of lime (hydrated or putty) in the mix.



Philadelphia Electric Co., Southwork Station, Philadelphia, Pa. Designed by owner's engineering dept., with Paul Cret Associates, Consultants. Gen. Archt.—United Engineers & Constructors, Inc., Philadelphia.



Edward S. Harkness Memorial Hospital, New York City. Archt.—Voorhees, Walker, Foley & Smith; Contr.—Vermilya Brown Co., Inc.,—both of New York City.



Warner Bros. Distributing Corp., Minneapolis, Minn. Omicron Mortarproofing used throughout including glass block panels. Archt.—E. C. A. Bullock, New York City; Gen. Contr.—Standard Construction Corp., Minneapolis.



Sumner High School, Kansas City, Kansas. Archt.—Joseph W. Radotinsky; Engr.—Horner and Wyatt; Contr.—S. Patti Construction Co.—all of Kansas City, Kansas.



MASTERPLATE HEAVY DUTY

Here's Why MASTERPLATE Makes Floors Wear 5-6 Times Longer

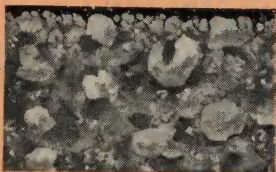


A diamond, the hardest substance known, shatters under impact . . . metal merely flattens out.

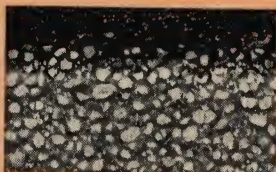
This fact shows that mere hardness is not the answer to longer floor life. It also explains why Masterplate floors, with their thick, ductile surface of cement-welded iron particles, wear up to 5—6 times longer than ordinary concrete floors. (See report on tests of 138 different types of concrete floor surfaces made by National Bureau of Standards. Copy on request.)

Before Master Builders' discovery of cement dispersion, only 30—40 lbs. of iron per 100 sq. ft. could be floated into a concrete floor and kept at the surface, retaining maximum strength and wear. Now with Masterplate, a steel blue granular material in which is combined specially processed iron particles and cement dispersion, up to 120 lbs. of metal can be used, producing a thick, ductile surface which resists grinding wear, impact and corrosion.

Compare the thickness . . .



Ordinary Metallic Aggregate Floor—30-40 lbs. per 100 sq. ft.



Masterplate Floor—120 lbs. per 100 sq. ft.



Here is a section of a Masterplate Floor. Note the depth to which the metallic aggregate is incorporated. It is this type of floor which is giving modern industry maximum wear-service.

Advantages of Masterplate

Because it frequently wears 5—6 times longer than ordinary concrete floors, Masterplate has been called "industry's toughest floor." In addition to its great durability, Masterplate possesses the following advantages:

Dustless—Due to the ductility of its metallic aggregate, Masterplate withstands heavy grinding wear without dusting.

Corrosion Resistance—Masterplate stands up well under the attacks of cutting oils, strong alkalis and many corrosive conditions encountered in industry.

Sparkproof—Sparks from floors can be caused either by friction or by static electricity. A Masterplate metallic-concrete floor has the right degree of conductivity of electricity to give full protection; a plain concrete floor has practically none. Where explosive conditions exist around combustible gases or dust, such as in aircraft hangars, garages, paint shops, hospital operating rooms, munition factories or chemical plants, a Masterplate metallic-concrete floor should be specified to provide positive and safe dissemination of the static electricity.

For sparkproof floors apply not less than 90 lbs. of Masterplate per 100 square feet—preferably more. (Full information on sparkproof floors furnished upon request.)

Non-Slip—A durable non-slip surface can be produced on a Masterplate floor by suitable finishing operations. (See specifications.)

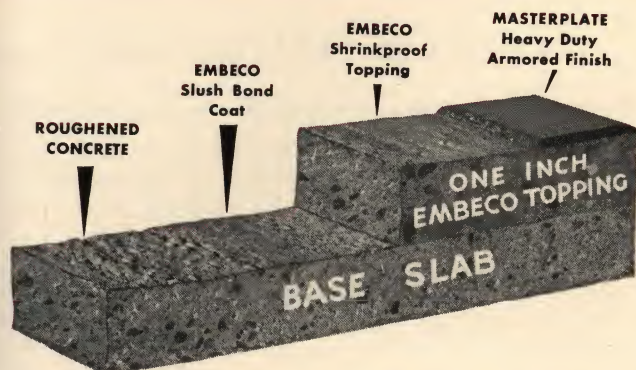
Easy to Clean—Masterplate Floors are easy to clean because of their smooth, non-absorbent surface, free from shrinkage cracks, pits and ruts. They stand up under steam and strong cleansing compounds.

Economical—The low original cost and wear-resisting qualities of a Masterplate floor make it the most economical in industry today.

Master Builders' installation technique insures proper results and eliminates much costly manual labor. Application is made by distribution over and floating into fresh concrete finish, in either monolithic or two course floors. (Detailed directions upon request).

Resurfacing Old Floors—Masterplate is used extensively for resurfacing, being incorporated in the fresh concrete topping placed over the old slab. (Detailed directions on request.)

for CONCRETE FLOORS



Showing use of Non-Shrink Embeco in resurfacing old concrete floors with Masterplate. (For advantages of Embeco in placing new and resurfacing old floors, see page 14.)

Specifications

Concrete floor shall be finished and hardened with a mixture consisting of 2 parts of MASTER BUILDERS CO. Masterplate* and 1 part of cement by weight, using (indicate quantity; see table below) lbs. of Masterplate per 100 sq. ft. and floor shall be cured with MasterKure, both used in accordance with the directions of the manufacturer, THE MASTER BUILDERS CO.

| Type of Service | Lbs. Masterplate per 100 sq. ft. | Type of Floating |
|------------------------|----------------------------------|--------------------|
| Light to Moderate Duty | 30-60 | Hand or mechanical |
| Moderate to Heavy Duty | 60-90 | Hand or mechanical |
| Heavy Duty | 90-120 | Mechanical only |

*If non-slip feature is desired, insert (Non-slip finish).

METALICRON—METALLIC HARDNER . . .

For light duty concrete floors

Like Masterplate, Metalicron contains Master Builders pure graded metallic aggregate combined with a pozzuolana, Omicron, but does not contain the cement dispersing agent.

Metallic Hardner is a properly graded, clean, water absorbent metal aggregate, but does not contain the pozzuolana, Omicron or Master Builders' dispersing agent. Their effective use is limited to 60 lbs. per 100 square feet. (Detailed directions on request.)

MASTERKURE . . . For curing concrete floors

MasterKure is a liquid "Membrane Curing Compound" which is applied to the concrete floor with brush or spray as soon after finishing as surface has set sufficiently to prevent injury. MasterKure provides a seal which holds the moisture in the concrete and insures proper curing. (See page 12 for further information on MasterKure.)

Masterplate floors are sparkproof



Masterplate Metallic - Concrete Sparkproof Floor undergoing a friction test made with rapidly rotating steel brush. No Sparks! No Dust!



Plain Concrete Floor undergoing the same friction test, made with same rapidly rotating steel brush. Sparks and Dust!



International Harvester Co., Baltimore Parts Depot, Baltimore, Maryland, in which is installed 156,000 sq. ft. of Masterplate Floors. Floor Contr.—Ce-Mas-Co. Floor Co., Chicago.



Byron-Jackson Factory, Los Angeles, Calif. Masterplate provides easy-to-clean, long-wearing floor surface. Archt. & Engr.—Ellis Wing Taylor; Contr.—C. L. Peck, both of Los Angeles.



COLORED MASTERPLATE

FOR PERMANENTLY COLORING AND HARDENING
CONCRETE FLOORS



Also available in Black

Color shades shown subject to slight variations with different brands of cements and aggregates.

Colored Masterplate is a combination of Cement Dispersion, Master Builders' pure, graded metallic aggregate, a pozzuolana and stable superfine oxides. Applied as a "shake" or "dust coat" when floor is laid, it produces a built-in wearing surface of deep, uniform color, highly resistant to wear. To enhance the color tone of the light colored finishes, a non-ferrous, tough, wear resisting aggregate, properly graded, is employed in Green, French Grey, Tan and Terra Cotta Masterplate.

Colored Masterplate is recommended for use either in two-course finish or where topping is omitted and base finished off as a wearing surface (monolithic).

The variety of pleasing colors available with Masterplate enables the architect to fit this long-life, economical floor into modern color schemes. Colored Masterplate floors not only contribute to an attractive and restful environment but help promote safety when used in plants for aisles and areas that should be specially marked.



Here is a section of a Colored Masterplate Floor. This "built in" colored iron-concrete surface assures many years' satisfactory service.

MASTERPLATE COLORED

COLORED MASTERPLATE

Colored Masterplate possesses all the characteristics of standard grey Masterplate plus the addition of attractive colors having maximum permanence.

Advantages of Colored Masterplate floors are:

1. Many times more wear-resistant than plain cement finish. (See photo at lower left.)
2. Omicron, by reducing soluble salts through pozzuolanic action, checks efflorescence, assures deep, clear color; likewise checks attacks of corrosive agents present in industrial areas.
3. Increased cost is much less than keeping a plain floor painted.
4. Elimination of inconvenience and cost of interruption when repainting floors.

Non-Slip—A special formula of Colored Masterplate with non-slip aggregate is manufactured for use in finishing colored ramps, corridors, stairs, wet areas where slip-proof surface is desirable.

Where Used—Colored Masterplate is recommended for use on floors in industrial plants, commercial buildings, offices, schools, institutions, etc., where a decorative effect is desired on floors that will be subjected to heavy foot traffic or truck traffic.

Specifications

TILE RED, PERSIAN RED, MAROON, BROWN, BATTLESHIP GREY AND BLACK.

Concrete floor surfaces (indicate areas) shall be constructed and hardened with a mixture consisting of 2 parts of Masterplate* and 1 part of cement by weight, using (see Table below) pounds of the metallic aggregate per 100 square feet in strict accordance with specifications furnished by the manufacturer, The Master Builders Company.

| Type of Service | Lbs. Masterplate per 100 sq. ft. | Type of Floating |
|-----------------|----------------------------------|--------------------|
| Light Duty | 30-45 | Hand or mechanical |
| Medium Duty | 45-60 | Hand or mechanical |
| Heavy Duty | 60-120 | Mechanical only |

For sparkproof floors apply not less than 90 lbs. of Masterplate per 100 sq. ft., preferably more.

*If non-slip feature is desired, insert (Non-slip finish).

CONCRETE FLOORS

Specifications

GREEN, FRENCH GREY, TERRA COTTA AND TAN

All floor surfaces (indicate areas) shall be constructed and hardened with a mixture consisting of 4 parts of Masterplate and 3 parts of cement by weight, using (see Table below) pounds of the Masterplate per 100 square feet in strict accordance with specifications furnished by the manufacturer, The Master Builders Company.

| Type of Service | Lbs. Masterplate per 100 sq. ft. | Type of Floating |
|------------------------|----------------------------------|--------------------|
| For Light Usage Only | 30 | Hand or mechanical |
| For Average Usage Only | 45 | Hand or mechanical |
| For Heavy Usage | 60 | Hand or mechanical |

DYCROME . . . For Coloring and Hardening Concrete Floors Already Installed

Dycrome is the acid-stain method of coloring and hardening concrete floors after installation; it produces varied tones of single colors or two-color, duotone effects.

Colors: Flemish Oak, Weathered Bronze, Cordovan Brown, Palmetto Green, Nile Green, Jade.

SPECIFICATIONS

Existing Floors—Concrete Floor areas (as indicated) shall be colored and hardened with MASTER BUILDERS COMPANY (insert color) Dycrome. Floors to be Installed—Concrete for floors to be Dycromed shall be proportioned (mix desired) to which shall be added 2 lbs. of hydrated lime for each bag of cement in the mix.

Typical Colored Masterplate Floors



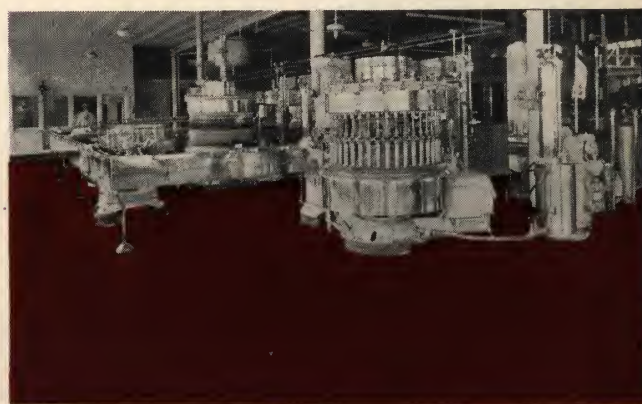
International Harvester Co. (Fred J. Green Co.) Live Oak, Florida—Display room and parts department.



Sears, Roebuck & Company, Boston, Mass. Archt.—Nimmons, Carr & Wright, Chicago, Ill. Contr.—Turner Construction Co., Boston, Mass.



Los Angeles Transit Lines Service Bldg., Los Angeles, Calif. Archt.—Owners. Contr.—J. A. McNeil Co., Los Angeles, Calif.



Coca Cola Plant, Ft. Worth, Texas. Archt.—P. M. Geren; Gen. Contr.—J. M. Gurley & Son Constr. Co.; Floor installed by Palmer & Adams—all of Ft. Worth, Texas.



MasterKure ... for Membrane Curing of Concrete ...

Curing is one of the most important stages of concrete making. If the curing is not done thoroughly, all the precautions taken in materials, methods, and costly supervision are wasted. Inadequate curing may result in the loss of as much as 40% of the strength. MasterKure is a solution of a synthetic resin and water-proofing compounds in an organic solvent. This solution spreads readily on wet concrete and deposits a hard, tenacious film which holds the moisture in the concrete.

MasterKure is a liquid, applied with brush or spray as soon after finishing as surface has set sufficiently to prevent injury.



Mastertex ... Cement Base Paint ...

Mastertex is a water-resisting cement-base paint which protects and decorates exterior and interior surfaces of concrete, concrete block, brick, tile, stucco and other masonry. Can be applied directly to any of these surfaces. (Mastertex complies with Federal Specification—TT-P-21, Type II, Class A.)

An outstanding feature of Mastertex is the fact that it now contains Master Builders cement dispersing agent. Cement dispersion increases the durability of the hardened paint, particularly with respect to its resistance to checking.

Mastertex is distinguished from most other cement-base coatings by its stearate content, which gives the Mastertex finish minimum absorption and causes it to stay cleaner longer.

Mastertex is applied to a wet surface, forms a strong mechanical bond, can be brushed or washed repeatedly and has the distinctive feature of allowing the underneath concrete to "breathe." This prevents building up of water behind the film which causes blistering and peeling of oil, glue, casein and other non-breathing coatings.

General Specification

All surfaces as indicated on plans shall be given two coats of Master Builders Mastertex, cement-base paint, following the directions of the manufacturer, The Master Builders Company, Cleveland, Ohio.

MASTERKURE ...

MASTERTEX

Advantages

MasterKure eliminates the use of burlap, paper, sand, sawdust, straw and other less certain and often more costly curing methods. When used on floors, it protects against dirt, and the stains of plaster droppings.

In curing efficiency, the MasterKure "Membrane Curing Method" assures more thorough and complete curing of floors and slab concrete than any other practical means except ponding.

Applications

Among the more common applications that have proved the value of curing concrete by the MasterKure membrane method are: floors, highways, bridges, buildings, dams and walls.

Two Types

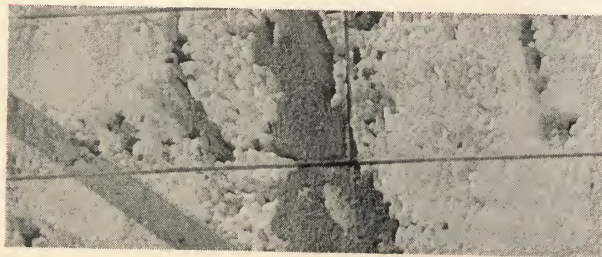
MasterKure No. 1 and MasterKure No. 2—both equally effective in curing action: No. 1 is colorless and is easily removed prior to waxing a colored floor. No. 2 may take on a yellowish cast with age; it is not as easily removable.

Applications

Mastertex is highly recommended as the only satisfactory type of coating for interior of basement walls, concrete block, on swimming pools, garden pools, tanks, tunnels, and other masonry surfaces subjected to constant or intermittent moisture. Also recommended for inside white on porous masonry surfaces in dairies, laundries, and other places subject to steam, fumes and high humidity.

Standard Colors: White, Cream, Ivory, Green, Blue, Light Grey, French Grey, Dark Grey.

Pictorial directions for use on request.



This photo shows what can happen to oil paints which are applied on masonry surfaces. Mastertex contains no oil, glue, or casein—it will not flake, blister or peel. Mastertex bonds firmly to any clean, porous, masonry surface.

APPLYING MASTERKURE



SPRAYING METHOD

BRUSH METHOD

Specifications

After the form is removed or when the surface is set sufficiently hard so that it will not be marred by the application, all concrete, floors, etc., shall be cured by the Master Builders Company Membrane Method with MASTERKURE (indicate No. 1 or No. 2, also whether for spraying or brush method) in strict accordance with the directions furnished by the manufacturer.

MASTERSEAL . . . For Colorless Surface Coating

Masterseal seals pores of brick, tile, stucco and concrete without materially changing the appearance of the surface, producing a surface that is non-absorbent and corrosion-resistant. It retards disintegration, resists the corrosive action of smoke and fumes, checks staining and efflorescence.

Two types of Masterseal are available. Masterseal No. 1 is produced from a solid hydro-carbon base which is alkali and acid proof. It is distinguished from Masterseal No. 2 by its greater penetration, greater water-repellency and greater durability. No. 1 darkens the surface slightly but is longer lived; No. 2 does not appreciably affect the color or tone of the surface. Both can be applied to clean, dry, frost-free surfaces down to 50° F. with full efficiency. (Complete directions sent upon request.)

COLORWAX

Colorwax, which develops the full color and beauty of a floor, is especially made for use on Colored Masterplate, tile, terrazzo and all colored concrete floors. It combines the highest quality wax with the finest stable colors. Very economical to use because of greater covering capacity.

Colorwax protects the surface from traffic wear and gives an otherwise harsh floor a pleasant, "soft" feeling underfoot. Filling and sealing the pores with a water and stain-resistant film, Colorwax helps keep the surface clean and makes up-keep simple and inexpensive.

Where Used: department stores, theaters, schools, hotels, hospitals, office buildings, banks, etc. In addition to its wide use on hard-surface floors, Colorwax provides a protective and beautifying coating for linoleum, cork, composition, asphalt tile, rubber and other semi-soft type floorings. Unlike certain chemical preparations, Colorwax contains no ingredients that can soften or injure these materials.

Made in ten standard colors: also non-colored. (Complete directions sent upon request.)

MASTER MIX . . . For Hardening Floor Slabs by Chemical, Integral Method

At a cost no greater than surface treatments, Master Mix hardens, densifies floor topping throughout, and converts the solubles where disintegration starts. Providing resistance to corrosion, Master Mix is important for floors in process industries.

Master Mix makes "dry" mixes easily placeable with 15% less water, because of cement dispersion, trowels easily to an excellent finish with a minimum of labor, and produces strong, dense concrete with minimum shrinkage.

In Master Mix, the Omicron ingredient adds strength to the wearing finish and increases its resistance to the corrosive attacks of acid and alkali solutions.

Specifications

Concrete floor areas (indicate areas) shall be hardened and finished with Master Builders Co. Master Mix in the proportions of 1 $\frac{2}{3}$ lbs. of Master Mix per sack of cement used in the mix in exact accordance with directions of manufacturer.



Non-Shrink EMBECO

Non-Shrink EMBECO . . .

Non-Shrink Embeco is a dry powder compound composed mainly of specially prepared metallic aggregate and Master Builders' cement dispersing agent and reagents to promote oxidation and strength. Added to concrete or mortars it counteracts shrinkage.

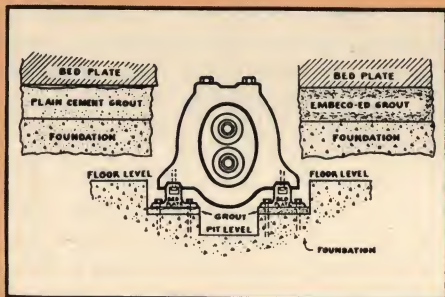
For GROUTING . . .

The excess water required to make a normal mix sufficiently *flowable* for most grouting jobs causes: (1) serious shrinkage (2) slow set (3) low strength (4) extreme grout cavitation because of excess bleeding.

With Embeco these disadvantages of ordinary grouts are overcome because: (1) Cement Dispersion in Embeco produces greater placeability even though water content is reduced up to 15% (2) when mixed with sand, cement and water Embeco expands just enough to produce densification of the grout and sufficient pressure to make a complete, level contact. Other advantages of Embeco grout:

1. It is quick-setting, permitting the operation of equipment at the end of 12 hours if necessary.
2. It develops high strengths in 24 hours: greater than ordinary grouts in 7 days . . . ultimately 51% greater.
3. It is oil and water resistant.

Cross-section shows how slight expansion of Embeco Grout results in complete contact with bedplate.



For SETTING HEAVY FLOORTILE . . .

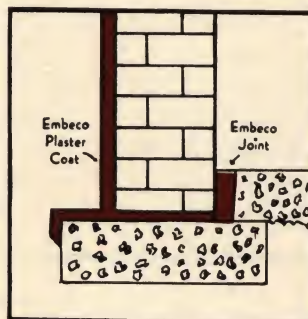
Non-Shrink Embeco Mortar is widely used to grout heavy industrial tile, quarry tile, vitrified brick, deck tile and other types of exposed floor tile units. It completely eliminates shrinkage of mortar joint and densifies mortar, thus preventing seepage of moisture and corrosive liquids into mortar and between mortar and tile. On Architectural Work as verandas, terraces, roof-decks and other suspended slabs—resists leakage into substructure. For Industrial Work, dairies, bakeries, bottling plants, meat packing houses—confines corrosion to surface, insuring long floor life. Procedure and specifications sent on request.

For FLOOR CONSTRUCTION . . .

Thorough bonding of the topping course, when placing a new floor or resurfacing an old one, can be insured by brushing into the surface of the rough slab, a slush bond coat of Embeco. Non-Shrink Embeco also recommended for topping course. See drawing page 9. (Detailed information sent on request.)

The joint between floor slab and walls is one of the greatest sources of leaks. The concrete slab shrinks and pulls away from the walls, leaving an easy entrance for water. This may be avoided at the time of construction by filling these joints (illustration below) with Non-Shrink Embeco Mortar. (Specification below.)

WATERPROOFING—Plaster Coat Method . . .



By adding Non-Shrink Embeco to the cement plaster coat on exterior foundation walls, a tight, leak-proof coating is obtained which is the most permanent and efficient protection against leaky basements. (Specifications below.)

For CONCRETE REINTEGRATION . . .

Non-Shrink Embeco is used in the rebuilding of spalled and eroded concrete surfaces. Since Embeco overcomes the natural shrinkage in patching concrete, the restored areas stand firm, resistant to the elements. Send for detailed specifications.

Specifications

(a) EMBECO PLASTER COAT—All exterior surfaces (or interior, as conditions dictate) of foundation walls and footings below grade shall be pargeted with not less than $\frac{1}{2}$ in. of mortar, consisting by volume of: 1 sack portland cement, 3 cu. ft. sand to which not less than 25 lbs. of Non-Shrink Embeco Aggregate shall be added per each sack of cement.

(b) GROUTING EMBECO JOINT AT FLOOR LINE—Junctures between basement concrete floor line and foundation walls shall be grouted with a mixture of: 100 lbs. Embeco, 2 sacks portland cement, 3 cu. ft. sand.

(c) For WATERPROOFING Concrete, Haydite or Cinder Block—The surface shall be prepared and an Embeco mixture shall be brushed on according to directions of manufacturer, THE MASTER BUILDERS CO., CLEVELAND. (For description see page 15 . . . EMBECO No. 5—Metallic Waterproofing.)

EMBECO No. 5 . . .

METALLIC WATERPROOFING

. . . Brush Coat Type for Application to Concrete and Masonry Surfaces, Interior and Exterior.

Embeco No. 5 consists of an approved, pure, finely ground metallic aggregate, combined with an oxidation catalyst which is free from ammonia. This is important because the fumes caused by oxidation in some products will seriously retard a job. Successive brush coats (normally four coats) are applied, alternating Embeco No. 5 mixed with sufficient water to produce a brushable consistency, and a mixture of portland cement, Embeco No. 5 and fine aggregate. The iron in the mixture oxidizes and expands, filling the voids left by the water as it evaporates. This provides a metallic-cement sheath which tightly bonds to the surface and checks passage of water even under heavy pressure.

Like Mastertex, Embeco No. 5 metallic waterproofing has two distinct features: it can be applied to a wet surface, and it allows the concrete to "breathe." By permitting passage of vapor from the underneath concrete, Embeco No. 5 prevents collection of liquid behind the metallic-cement sheath which eventually forces off the coating. This is a common problem with non-breathing type materials.

Embeco No. 5 method is one of the most economical because of the low first cost and long life of the application.

Specifications

All masonry surfaces (indicate areas) shall be waterproofed with (indicate number of coats) Master Builders Co. Embeco No. 5 used and applied in exact accordance with directions of manufacturer.

STEAROX "100" . . .

Stearate Type Integral Treatment for Mass Concrete and Mortars.

Stearox "100" (Powder), used to render pores water-repellent, contains 100% stearic acid. Because of its concentrated form, "100" assures maximum efficiency and economy.

Specifications

Stearox "100" shall be added in the proportion of .2 lb. per sack of cement, exactly in accordance with the directions of manufacturer, THE MASTER BUILDERS CO.

CONCRETE PRESERVATIVE . . . Protective Coating for Concrete and Mortar

Protects concrete from the attack of reagents which ordinarily cause rapid deterioration, such as solutions of alkalis, acids and salts. It is a moderately viscous amber solution of a non-volatile synthetic base, which, when applied on any dry concrete surface, penetrates and fills the pores with a corrosion resistant having greatly reduced permeability. An excellent alkali-resisting priming coat for oil paints where used on concrete or masonry. Forms a strong bond between paint and concrete, prevents blistering and peeling. Concrete Preservative is recommended for applications to all concrete exposed to severe corrosive conditions, such as floors in food manufacturing plants, bakeries, laundries, concrete tanks and vats, sewers, silos, bottling plants.

Specifications

Concrete floor (indicate areas) shall be treated with Master Builders Co. Concrete Preservative. To be applied direct from can with brush, after removing all surface dust, scale, etc., in exact accordance with directions of manufacturer. Surface may be used on following day or not less than 12 hours following application.

SANISEAL . . . Chemical Hardener for Floors Already Installed.

A powerful chemical hardener, which when mixed with water and brushed into the floor surface, deposits in the pores a hard, wear-resisting crystal. This arrests dusting and hardens the surface.

Saniseal is designed as a maintenance or corrective treatment for floors already installed. Not less than 2 lbs. of Saniseal should be used per 100 sq. ft.

Specifications

All concrete (or terrazzo) floors, after they have been cured and dried, shall be treated with Master Builders Co. Saniseal, used in exact accordance with directions of manufacturer.

INFORMATION FILMS

The film "Concrete Facts" tells the story of cement dispersion, an outstanding development that improves all concrete properties. It explains pictorially the action and benefits of both cement dispersion and air entrainment.

"The Story of Slab 37," another Master Builders' information film, tells about the development, features, and method of applying Masterplate—industry's toughest concrete floor.

Both films are available for private showing to interested groups of any size. Write for complete information.

FIELD SERVICE: Master Builders' thoroughly trained field representatives are located in all principal cities. We invite you to call on one of these men whenever confronted with a problem related to concrete and mortar.

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North
Telephone: 7-3306

CALIFORNIA

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Telephone: Van Dyke 1619

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St. Paul 3, 11 Como Avenue
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Pittsburgh 19, 304 Ross St.
Telephone: Grant 9580

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Houston, 1539 Vermont St.
Telephone: Hadley 4872

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Milwaukee 4, 647 W. Virginia St.
Telephone: Broadway 2-1835

CANADA

Toronto, Ontario
1107 Millwood Rd., Leaside
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Montreal, Quebec
1434 St. Catherine St. W.
Telephone: Harbour 6321

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Reliance Equipment Co.

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Phoenix
Superior Sand & Gravel Co.

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Little Rock
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Bakersfield Sandstone Brick Co.
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Lansing
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Valley Ready Mix Concrete Co.
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THE MASTER BUILDERS COMPANY

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